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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,772	07/31/2001	Jeffrey Alexander Wilmer	K0476/7005 PCL	4009

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EXAMINER	
SOOHOO, TONY GLEN	
ART UNIT	PAPER NUMBER
1723	14

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/919,772	WILMER ET AL.	
	Examiner	Art Unit	
	Tony G Soohoo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 37-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 37-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sensor signals of the embodiment modes of the new claims 37-39 with arrows indicating the direction of sensor signals to and from the sensor, cpu and valves must be shown in separate drawing figures since there is no sensor signal is shown connecting the other valve to the cpu or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 27 and 37-38 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cadeo et al 4964732 (newly cited)

Cadeo et al discloses the following:

A blending system (fig 3), comprising:

a first material supply line (from source 1 to 21);

a second material supply line (from source 4 to 21);

a static mixer (13) fluidly connected downstream of the first and the second material supply lines; and

a process control system (9, 10, 15) comprising a first flow control device (15) positioned on the first material supply line, a first flowmeter sensor (10) and second sensor 10 positioned on at least one of the first and the second material supply lines, and a controller (9, 9,) comprising logic code to provide a control signal to the first flow control device (15) based upon a sensor signal (see dotted lines from 10 to 9 to 15) provided by the first sensor (10) or alternately controlling the valve 15 via the sensor 10 on the other line. See column 2, lines 68 through column 3, line 1.

The use of Cadeo's system includes:

A method of supplying blended process materials, comprising:

supplying a first process material through a first of material supply line;

supplying a second process material through a second of material supply line;

blending the first and the second process materials in a static mixer fluidly connected downstream of the first and the second material supply lines; and

regulating the supply of the first or second process materials with a first or second valve positioned on the first material supply line based upon a sensor signal provided by a sensor positioned downstream of the static mixer.

With regards to claim 3, note that a measurement of mass flow would measure and sense the density of material per rate of time.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3 and 27, 37-39 are rejected under are 35 U.S.C. 103(a) as obvious over Jones et al 5423607 in view of Cadeo et al 4964732.

The Jones reference discloses the following:

A blending system (fig 1), comprising:

a first material supply line (from source 24 to flow line 26, 40, 40, 42, 50;

a second material supply line (12 to 14, 18, 50);

a mixing area (point A) fluidly connected downstream of the first and the second material supply lines; and

a process control system (20, 18, 19, 39, 36, 41, 40, 34, 36) comprising a first flow control device (42) positioned on the first material supply line, a first mass flow meter sensor (40) positioned on at least one of the first and the second material supply lines a second mass flow meter 18, and a controller (20) comprising logic code to provide a control signal to the first flow control device (42) based upon a sensor signal (see dotted lines from 10 to 9 to 15) provided by the first sensor (40) and/or the 2nd mass flow sensor 18, and the provision of a final mass flow meter with signal 47 to regulate the total output flow from line 50.

And the use of Jones et al's system includes:

A method of supplying blended process materials, comprising:

supplying a first process material through a first of material supply line;

supplying a second process material through a second of material supply line;

blending the first and the second process materials in a static mixer fluidly connected downstream of the first and the second material supply lines; and

regulating the supply of the first process materials with a first valve positioned on the first material supply line based upon a sensor signal provided by the 1st or 2nd sensor positioned downstream of the supply within the supply lines and a control feedback of the final mass flow regulation sensor signal 47 to the microprocessor control 20.

The Jones '607 reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of provision a static mixer in the mixing area and the use of a static mixer in the manipulative steps of the system.

The reference to Cadeo et al teaches that a 1st material supply 1, and 2nd material supply 4 which is controlled by a sensor 10 feedback control to a valve 15 may

have a static mixer assembly 13 in order to further mix the two fluid supplies for better homogenization of the flows together prior to a final sensing of the mixture at 18-20.

In view of the teaching by the Cadeo et al reference that a static mixer may be provided after the introduction of two source material flows together in order to provide a better mixing of flows, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the mixing area of the Jones device and method with a static mixer such as taught by the Cadeo et al reference located prior to the final mixture mass flow sensor signal 47 of Jones et al in order to provide a better mixing of the flows from together prior to the final sensing of the mixture by the final mass flow sensor.

With regards to claim 3 and the recitation of a "density sensor", it is noted that a measurement of density may be performed by various passive testing and measurement devices utilizing different various energy sources, such sound, light, any portion of the spectrum of wave energy and the corresponding consideration of the refractive index measurements of the energy, or electrical conductivity as means to passively test and measure properties of a material in which a physical property may be calculated (such as determination of density, mass flow, concentration, conductivity , pH , etc). Thus, the term density sensor may structurally define a wide range of physical sensors which may perform testing and measurements in which the density may be calculated. This is inclusive of the mass flow sensors Jones reference which measures a mass density per rate of time of the flow.

Assuming in argument that a mass flow sensor is not a "density sensor" per se, nonetheless such a calculation may be made by a person having ordinary skill in the art

and easily programmed in the control circuit to determine the density whereby the variables of the density of the input materials A and B are constant and that a determination of the concentration of the mixture A and B as determined by the sensor may be used to calculate the relative density for control of the valve such that a more precise density of material of A to B is provided for in the final end product.

With regards to claim 39, the mass flow sensor measures the mass density of the flow after mixing and thus a determinant of the volume of material exiting the mixing point. Additionally, it is known that the rate of flow of the output is a direct variable in the amount of material which may be used for further processing, It is also commonly known in the art of fluid production that fluctuation changes in mass flow or volume rate output in processing pipelines cause flow fluctuations which are undesirable in an inefficient transport, feed rate, and pressure effect considerations in the product processing of the fluid material. The Jones et al reference discloses all of the recited subject matter as defined within the scope of claim 3 with the exception of the step of regulating the output volume to be constant (i.e. constant mass flow value). In view of the discussion by Jones that it desires to measure the mass flow via the signal 47, and in view of the common knowledge in the art that fluctuation changes in mass flow or volume rate output in processing pipelines cause flow fluctuations which are undesirable in the result of producing an inefficient pipeline transport, an unbalanced feed rate, and an uncontrolled pipeline pressure effects within the product processing of the fluid material and stress upon the pipeline infrastructure, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the method of Jones

et al with the additional step of regulating the mass flow volume exiting the mixture point so that it is constant so as to produce a more efficient transport of material along the pipelines.

Response to Arguments

6. Applicant's arguments, see paper no 11, filed 6/30/03, with respect to the rejection(s)of claim(s) s 1,3,37-39 under 102/103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the prior art as discussed above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following disclose sensors in at least of one of the material supplies lines prior to the mixing point whereby the sensor controls a valued feed of the source: Pervis et al 5823219, Brazelton 4642222, Peltzer 5993671, and 6224778, and 5641410.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action whereby applicant deleted the requirement of the sensor positioned downstream of the static mixer to a configuration of the sensor positioned upstream of the static mixer upon at least one of the 1st or 2nd material supply lines. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G Soohoo whose telephone number is (703) 308-2882. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri.. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tony G Soohoo
Primary Examiner
Art Unit 1723

tgs

TONY G. SOOHOO
PRIMARY EXAMINER